REMARKS

I. Introduction

These remarks are being filed in response to the Office Action dated April 25, 2008. Claims 1-5, 8, 9, 11-15 and 17 are currently pending in this application. Claims 6, 7, 10 and 16 were previously cancelled. Applicant's thank Examiner Alix E. Echelmeyer for participating in the telephonic interview on July, 1, 2008, during which time Applicant's representatives discussed the instant claims in view of the combination of prior art references cited by the Examiner.

For at least the following reasons this application should be allowed and the case passed to issue.

II. Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-5, 8, 9, 11-15 and 17 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kilb et al U.S. Patent Pub. No. 2001/0016282 (Kilb) in view of Yanagihara et al., U.S. Patent No. 5,543,250 (Yanagihara). Applicants respectfully disagree.

Claim 1, recites in pertinent part,

> "[a]n alkaline storage battery comprising . . . (g) at least one current collector plate selected from the group consisting of (g1) a conductive current collector plate joined to the inner face of the bottom of said case and forming a path distributed two-dimensionally between the inner face of the bottom of said case and said first electrode for allowing a generated gas to transfer and (g2) a conductive current collector plate joined to the inner face of said sealing plate and forming a path distributed two-dimensionally between the inner face of said sealing plate and said second electrode for allowing a generated gas to transfer, *said path including pores that communicate with one another and being formed of a part of said current collector plate*,"

Similarly, claim 17 recites in pertinent part,

> "[a]n alkaline storage battery comprising . . . at least one current collector plate selected from the group consisting of (g1) a conductive current collector plate joined to the inner face of the bottom of said case and forming a gap between the inner face of the bottom of said case and said first electrode and (g2) a conductive current collector plate joined to the inner face of said sealing plate and forming a gap between the inner face of said sealing plate and said second electrode, *said gap including pores that communicate with one another and being formed of a part of said current collector plate,"*

In order to establish a *prima facie* obviousness rejection under 35 U.S.C. § 103(a), basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must not be based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Further, "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006). the legal conclusion of obviousness." *In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006).

At a minimum, the cited prior art does not disclose (expressly or inherently) a path or gap that includes "*pores that communicate with one another and being formed of a part of said current collector plate*," as recited in independent claims 1 and 17.

As explained in the previous response filed on February 14, 2008, FIG. 2 of the instant disclosure, shows that pores (22) are formed of a part of the current collector plate (20) and communicate with other pores (22). The pores are formed in a porous material, (specification page 13, lines 21-25). The pores are distributed almost the entire interfacial area between the electrode and the bottom of the case of the inner face of the sealing plate (see FIGS. 1-4).

As shown, for example in FIG. 1, the conductive sheet or current collector plate, (7) forms the gas transfer path (9), that is distributed at the whole interfacial area *between* the inner bottom face of the case (2), and the positive electrode (4). The gas transfer path, as claimed, provides high gas-transfer efficiency.

Furthermore, as shown in Table 9 of the present disclosure, the use of a current collector plate, including the pores as defined in the claims, improves gas-transfer, thereby resulting in a battery having excellent characteristics. (See specification page 41, lines 1-6).

The Examiner asserts that Kilb teaches a battery in which pores of the electrode supports "would inherently be in communication with each and with the gas transfer path," and "Kilb et al. teach that recesses in the electrode adjacent the bottom of the case ensure proper gas exchange." (See Office Action dated April 25, 2008 at page 3). However, as explained below, the recited configuration is not inherent in the device of Kilb.

In contrast to the claimed device, Kilb describes recesses (11) in the electrode surface (5) adjacent to the bottom of the case (2), (see paragraph 22). However, Kilb fails to disclose that a gas transfer path is formed by pores that communicate with one another and that *the path is formed of a part of the current collector plate*, as recited in currently amended claims 1 and 17.

Furthermore, Yanagihara fails to cure the deficiencies of Kilb, as at a minimum Yanagihara also fails to disclose, either expressly or inherently that, the path (claim 1) or the gap (claim 17), includes, "pores that communicate with one another and being formed of a part of said current collector."

In contrast to the subject matter of claims 1 and 17, Yanagihara describes, a plate (1) buried in the electrode (4), hence, the holes of the metal support are **filled** with the electrode material as illustrated in FIGS. 5 and 6 of Yanagihara. Yanagihara describes "a filling of an

active material being provided between the first and second metal layers with the punching burrs of the first and second metal layers, **the punching burrs being embedded in the active material**." (See col. 2. lines 58-61). Therefore, Yanagihara clearly teaches away from providing a gas transfer pathway or gap.

Moreover, the metal substrate of Yanagihara is the core material, (see FIGS. 5 and 6), of a *wound* battery, (see FIG. 7) and thus has a completely different function as the present stacked battery.

Kilb also specifically teaches away from electrodes "which are produced, for example, by rolling," and states that "there is no need for complex impregnation processes for the electrodes," (see paragraphs 24 and 25).

Furthermore, even if the metal substrate of Yanagihara was modified in such a way as to include pores that form a gas transfer path or gap, the metal substrate of Yanagihara would penetrate the adjacent separator (separator 13 as shown in FIG. 7), thereby causing a short-circuit between the positive electrode (12) and the negative electrode (11) of the wound battery. Accordingly, any modification of Yanagihara to include the pores as recited in the current claims, would destroy the wound battery of Yanagihara.

Thus, both the configurations of Kilb and Yanagihara each specifically teach away from being combined with one another.

Moreover, as discussed above, the subject matter of the present disclosure as defined in amended independent claims 1 and 17, recite that pores are formed of a porous material. As shown in FIGS. 1-4, the pores are distributed at almost the whole interfacial area between the electrode and the bottom of the case or the inner face of the sealing plate. This configuration has

the unexpected advantage of providing a high gas-transfer efficiency, thereby improving battery performance, (see specification page 41, lines 1-6).

Therefore, neither Kilb nor Yanagihara, either alone or in combination teach or suggest that a gas transfer path or gap is formed by pores that communicate with one another and that these pores are formed of a porous material, and it would not be obvious to one having ordinary skill in the art to combine these two devices, as the references teach away from the proposed modifications.

Accordingly, claims 1 and 17 are allowable over the prior art.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987).

Therefore, as independent claim 1 is patentable for the reasons set forth above. Therefore, it is respectfully submitted that claims 2-5, 8, 9, 11-15, which are dependent on claim 1, are also patentable.

III. Conclusion

In view of the above amendments and remarks, Applicants respectfully submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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